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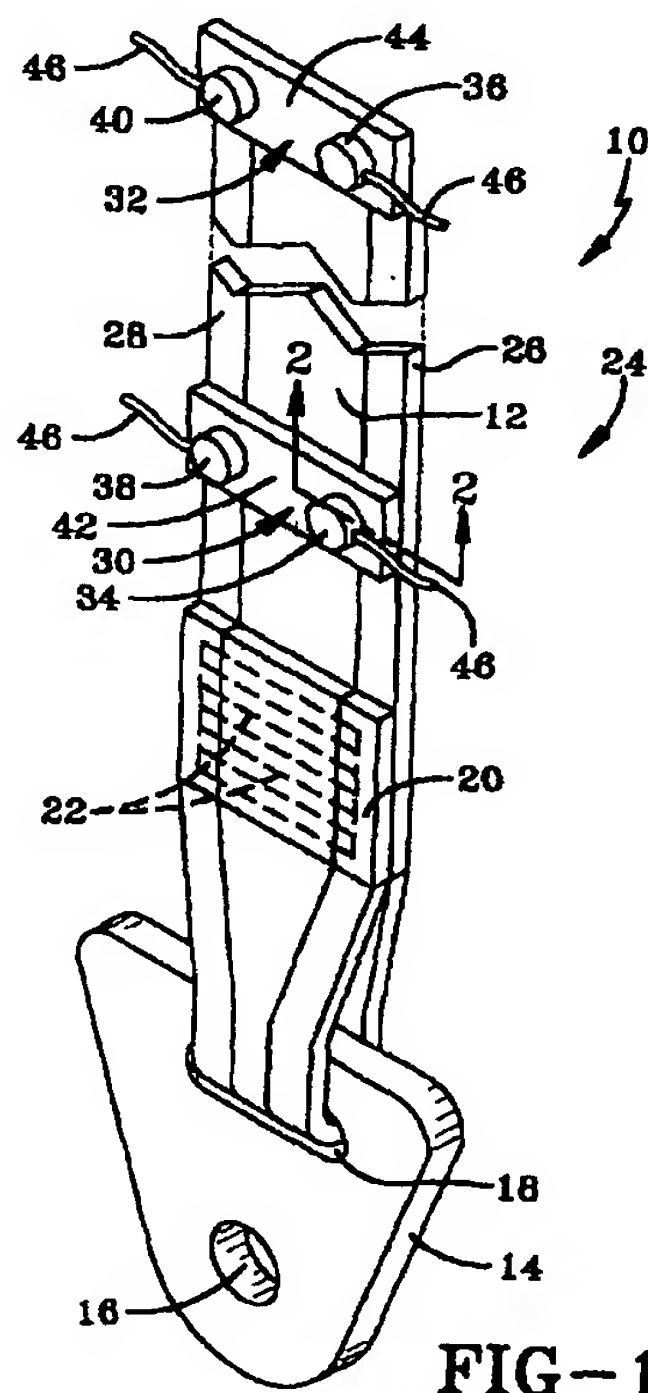
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(54) **Safety belt with load sensor**

(57) A load sensor (24) for a vehicle safety belt (10) comprises means for determining an electrical characteristic of the belt and control means for comparing the sensed characteristic with a reference level for the characteristic. In one embodiment, conductive fibers (26, 28) are interwoven into the belt and electrical contacts (30, 32) are provided at each end 20 thereof. Excessive loading of the belt results in a break in the fibres which, in turn, results in electrical discontinuity. The discontinuity is sensed by an electrical sensor and indicator means is provided to indicate to the driver of the vehicle that a belt has been excessively loaded.



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EUROPEAN SEARCH REPORT

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EP 99 20 2589

DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)		
A	DE 25 08 728 A (BERGER OHG ELASTIC) 9 September 1976 (1976-09-09) * figure 2 * * page 1, paragraph 4 * * page 4, paragraphs 1,2 * * page 5, paragraph 3 *	1-3	B60R22/12 B60R22/48 B60R22/16 B64D25/06		
A	US 3 926 227 A (TAKADA DECEASED TAKEZO ET AL) 16 December 1975 (1975-12-16) * figures 1-5B * * column 1, line 5-7 * * column 2, line 7 - line 50 * * column 2, line 65 - column 3, line 15 *	1			
A	DE 37 14 088 A (MESSERSCHMITT BOELKOW BLOHM) 1 December 1988 (1988-12-01) * figures 1,4,5 * * column 2, line 66 - column 3, line 14 * * column 4, line 35 - line 64 *	1			
A	US 4 958 853 A (DOTY GERALD A) 25 September 1990 (1990-09-25) * figures 1-5 * * column 1, paragraph 1 * * column 2, line 49 - column 3, line 58 *	1	<table border="1"> <thead> <tr> <th>TECHNICAL FIELDS SEARCHED (Int.Cl.7)</th> </tr> </thead> <tbody> <tr> <td>B60R B64D A62B</td> </tr> </tbody> </table>	TECHNICAL FIELDS SEARCHED (Int.Cl.7)	B60R B64D A62B
TECHNICAL FIELDS SEARCHED (Int.Cl.7)					
B60R B64D A62B					
The present search report has been drawn up for all claims					
Place of search THE HAGUE		Date of completion of the search 1 October 2001	Examiner D'sylva, C		
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The members are as contained in the European Patent Office EDP file on
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01-10-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2508728 A	09-09-1976	DE 2508728 A1	09-09-1976
US 3926227 A	16-12-1975	AU 6403573 A	03-07-1975
		BE 809100 A1	16-04-1974
		CA 995561 A1	24-08-1976
		DE 2364956 A1	11-07-1974
		FR 2212758 A5	26-07-1974
		GB 1413200 A	12-11-1975
		NL 7317774 A	02-07-1974
DE 3714088 A	01-12-1988	DE 3714088 A1	01-12-1988
		DE 3744737 A1	02-02-1989
		JP 1009049 A	12-01-1989
		US 4941710 A	17-07-1990
		US 5039168 A	13-08-1991
US 4958853 A	25-09-1990	NONE	

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